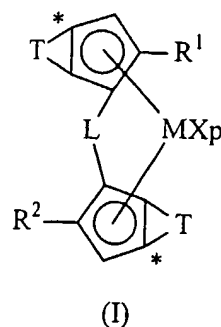


## CLAIMS

1. A multistage process comprising the following steps:

step a) polymerizing propylene with optionally one or more monomers selected from ethylene and alpha olefins of formula  $\text{CH}_2=\text{CHT}^1$ , wherein  $\text{T}^1$  is a  $\text{C}_2\text{-C}_{20}$  alkyl radical in the presence of a catalysts system, supported on a porous organic polymer, comprising:

i) one or more metallocene compounds of formula (I)



wherein:

M is an atom of a transition metal selected from those belonging to group 3, 4, 5, 6 or to the lanthanide or actinide groups in the Periodic Table of the Elements;

p is an integer from 0 to 3, being equal to the formal oxidation state of the metal M minus 2;

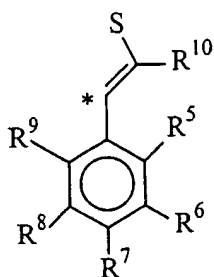
X, same or different, is a hydrogen atom, a halogen atom, or a R, OR,  $\text{OSO}_2\text{CF}_3$ ,  $\text{OCOR}$ ,  $\text{SR}$ ,  $\text{NR}_2$  or  $\text{PR}_2$  group, wherein R is a linear or branched, saturated or unsaturated  $\text{C}_1\text{-C}_{20}$  alkyl,  $\text{C}_3\text{-C}_{20}$  cycloalkyl,  $\text{C}_6\text{-C}_{20}$  aryl,  $\text{C}_7\text{-C}_{20}$  alkylaryl or  $\text{C}_7\text{-C}_{20}$  arylalkyl radical, optionally containing heteroatoms belonging to groups 13-17 of the Periodic Table of the Elements; or two X can optionally form a substituted or unsubstituted butadienyl radical or a  $\text{OR}'\text{O}$  group wherein  $\text{R}'$  is a divalent radical selected from  $\text{C}_1\text{-C}_{20}$  alkylidene,  $\text{C}_6\text{-C}_{40}$  arylidene,  $\text{C}_7\text{-C}_{40}$  alkylarylidene and  $\text{C}_7\text{-C}_{40}$  arylalkylidene radicals;

L is a divalent bridging group selected from  $\text{C}_1\text{-C}_{20}$  alkylidene,  $\text{C}_3\text{-C}_{20}$  cycloalkylidene,  $\text{C}_6\text{-C}_{20}$  arylidene,  $\text{C}_7\text{-C}_{20}$  alkylarylidene, or  $\text{C}_7\text{-C}_{20}$  arylalkylidene radicals optionally containing heteroatoms belonging to groups 13-17 of the Periodic Table of the Elements, and silylidene radical containing up to 5 silicon atoms;

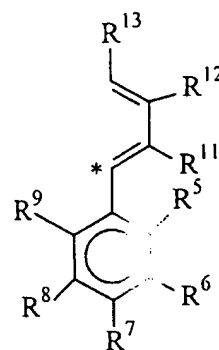
$R^1$ , is a linear or branched, saturated or unsaturated  $C_1$ - $C_{40}$ -alkyl radical, optionally containing one or more heteroatoms belonging to groups 13-17 of the Periodic Table of the Elements;

$R^2$  is a branched  $C_1$ - $C_{40}$ -alkyl radical;

$T$ , equal to or different from each other, is a moiety of formula (IIIa) or (IIIb):



(IIIa)



(IIIb)

wherein:

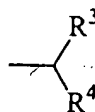
the atom marked with the symbol \* is bonded to the atom marked with the same symbol in the compound of formula (I);

$R^5$ ,  $R^6$ ,  $R^7$ ,  $R^8$  and  $R^9$ , equal to or different from each other, are hydrogen atoms or a linear or branched, saturated or unsaturated  $C_1$ - $C_{40}$ -alkyl,  $C_3$ - $C_{40}$ -cycloalkyl,  $C_6$ - $C_{40}$ -aryl,  $C_7$ - $C_{40}$ -alkylaryl, or  $C_7$ - $C_{40}$ -arylalkyl radicals, optionally containing one or more heteroatoms belonging to groups 13-17 of the Periodic Table of the Elements; or two or more  $R^5$ ,  $R^6$ ,  $R^7$ ,  $R^8$  and  $R^9$  can join to form a 4-7 saturated or unsaturated membered rings, said ring can bear  $C_1$ - $C_{20}$  alkyl substituents;

$R^{10}$  is a hydrogen atom or a linear or branched, saturated or unsaturated  $C_1$ - $C_{20}$ -alkyl,  $C_3$ - $C_{20}$ -cycloalkyl,  $C_6$ - $C_{20}$ -aryl,  $C_7$ - $C_{20}$ -alkylaryl, or  $C_7$ - $C_{20}$ -arylalkyl radicals, optionally containing one or more heteroatoms belonging to groups 13-17 of the Periodic Table of the Elements;

$R^{11}$ ,  $R^{12}$  and  $R^{13}$ , equal to or different from each other, are hydrogen atoms or a linear or branched, saturated or unsaturated  $C_1$ - $C_{20}$ -alkyl,  $C_3$ - $C_{20}$ -cycloalkyl,  $C_6$ - $C_{20}$ -aryl,  $C_7$ - $C_{20}$ -alkylaryl, or  $C_7$ - $C_{20}$ -arylalkyl radicals, optionally containing one or more heteroatoms belonging to groups 13-17 of the Periodic Table of the Elements; or two or more  $R^{11}$ ,  $R^{12}$  and  $R^{13}$  can join

- to form a 4-7 saturated or unsaturated membered rings, said ring can bear  $C_1$ - $C_{20}$  alkyl substituents;
- ii) an alumoxane or a compound capable of forming an alkyl metallocene cation;
- step b) contacting, under polymerization conditions, in a gas phase, ethylene with one or more alpha olefins of formula  $CH_2=CHT^2$ , wherein  $T^2$  is a  $C_1$ - $C_{20}$  alkyl radical, and optionally with a non-conjugated diene, in the presence of the polymer obtained in step a).
2. The multistage process according to claim 1 wherein the catalyst system further comprises iii) an organo aluminum compound.
  3. The multistage process according to claims 1 or 2 wherein step b) is carried out in the presence of an additional organo aluminum compound.
  4. The multistage process according to anyone of claims 1-3 wherein M is titanium, zirconium or hafnium; X is a hydrogen atom, a halogen atom or a R group wherein R is a linear or branched, saturated or unsaturated  $C_1$ - $C_{20}$  alkyl,  $C_3$ - $C_{20}$  cycloalkyl,  $C_6$ - $C_{20}$  aryl,  $C_7$ - $C_{20}$  alkylaryl or  $C_7$ - $C_{20}$  arylalkyl radical, optionally containing heteroatoms belonging to groups 13-17 of the Periodic Table of the Elements; L is selected from  $Si(Me)_2$ ,  $SiPh_2$ ,  $SiPhMe$ ,  $SiMe(SiMe_3)$ ,  $CH_2$ ,  $(CH_2)_2$ ,  $(CH_2)_3$  and  $C(CH_3)_2$ .
  5. The multistage process according to anyone of claims 1-4 wherein  $R^1$  is a methyl or ethyl radical;  $R^2$  is a group of formula (II)



(II)

- wherein  $R^3$  and  $R^4$ , equal to or different from each other, are linear or branched, saturated or unsaturated  $C_1$ - $C_{10}$ -alkyl radicals optionally containing one or more heteroatoms belonging to groups 13-17 of the Periodic Table of the Elements; and  $R^{10}$  is a hydrogen atom or a linear or branched, saturated  $C_1$ - $C_{20}$ -alkyl radical.
6. The multistage process according to anyone of claims 1 to 5 wherein in the compound of formula (I)  $R^5$ ,  $R^6$ ,  $R^8$  and  $R^9$ , are hydrogen atoms and  $R^7$  is a group of formula  $-C(R^{14})_3$  wherein  $R^{14}$ , equal to or different from each other, are a linear or branched, saturated or unsaturated  $C_1$ - $C_{10}$ -alkyl,  $C_3$ - $C_{10}$ -cycloalkyl,  $C_6$ - $C_{10}$ -aryl,

- C<sub>7</sub>-C<sub>10</sub>-alkylaryl, or C<sub>7</sub>-C<sub>10</sub>-arylalkyl radicals, optionally containing one or more heteroatoms belonging to groups 13-17 of the Periodic Table of the Elements.
7. The multistage process according to claim 6 wherein in the compound of formula (I) both T groups have formula (IIIb).
  8. The multistage process according to claim 7 wherein in the compound of formula (I) in one T group, R<sup>12</sup> is a C<sub>1</sub>-C<sub>20</sub> alkyl radical; and in the other T group R<sup>12</sup> being hydrogen.
  9. The multistage process according to claim 6 wherein in the compound of formula (I) one T group has formula (IIIa) and the other one has formula (IIIb).
  10. The multistage process according to claim 6 wherein in the compound of formula (I) both T groups have formula (IIIb) and R<sup>11</sup>, R<sup>12</sup> and R<sup>13</sup> are hydrogen atoms.
  11. The multistage process according to anyone of claims 1 to 10 wherein the organic porous polymer has preferably porosity due to pores with diameter up to 10 μm (100000 Å) higher than 0.1 cc/g.
  12. The multistage process according to claim 11 wherein in the organic porous polymer the total porosity due to all pores whose diameter is comprised between 0.1 μm (1000 Å) and 2 μm (20000 Å) is at least 30% of the total porosity due to all pores whose diameter is comprised between 0.02 μm (200 Å) and 10 μm (100000 Å).
  13. The multistage process according to anyone of claims 1-12 wherein:  
in step a) from 5% to 90% by weight, with respect to the polymer produced in the whole process, of a propylene homopolymer or a propylene copolymer containing up to 20% by mol of derived units of one or more alpha olefins of formula CH<sub>2</sub>=CHT<sup>1</sup> is produced, wherein T<sup>1</sup> is a C<sub>2</sub>-C<sub>20</sub> alkyl radical; and  
in step b) from 10 to 95% by weight, with respect to the polymer produced in the whole process, an ethylene copolymer containing from 5% to 90% by mol, of derived units of one or more alpha olefins of formula CH<sub>2</sub>=CHT<sup>2</sup> is produced, wherein T<sup>2</sup> is a C<sub>1</sub>-C<sub>20</sub> alkyl radical.
  14. The multistage process according to claim 13 wherein the ethylene copolymer obtained in step b) contains up to 20% by mol of a non conjugated diene.
  15. The multistage process according to claims 13 or 14 wherein in step a) a propylene homopolymer is produced.
  16. The multistage process according to anyone of claims 13-15 wherein in step b) the comonomers are selected from propylene and 1-butene.

17. A propylene polymer compositions obtainable according to the process of anyone of claims 1-17 comprising:
- a). 5% to 90% by weight, of a propylene homopolymer or a of propylene copolymer containing up to 20% by mol of derived units of one or more alpha olefins of formula  $\text{CH}_2=\text{CHT}^1$  wherein  $\text{T}^1$  is a  $\text{C}_2\text{-C}_{20}$ -alkyl radical; said propylene polymer or copolymer having isotactic pentads (mmmm) higher than 90%;
  - b) from 10 to 95% by weight of an ethylene copolymer containing from 5% to 90% by mol, of derived units of one or more alpha olefins of formula  $\text{CH}_2=\text{CHT}^2$  wherein  $\text{T}^2$  is a  $\text{C}_1\text{-C}_{20}$  alkyl radical; said composition having a flowability index equal to or lower than 2.